

ZS XPLOERER SOFTWARE: v1.4.0 (PSS0048-07) SOFTWARE UPDATE NOTIFICATION

Introduction

This document details the release of **Zetasizer XPLOERER software version 1.4.0 (PSS0048-07)** for the Zetasizer Ultra and Pro. Here forward it is referred to as ZS XPLOERER.

This release supports the Zetasizer Advance range of systems (Zetasizer Pro and Zetasizer Ultra at time of writing) instruments only and is not compatible with the Classic Zetasizer Nano series of instruments (Nano S90, Nano ZS90, Nano S, Nano ZS, Nano ZSE, Nano ZSP, Zetasizer μ V and Zetasizer APS) nor can it read the *.dts file format from the Classic Zetasizer series software 7.13 or earlier. However, it is possible to have both the ZS XPLOERER software and the Zetasizer software 7.02 or above installed on the same computer.

Installation

It is assumed that you have authority to install or update software within your company's SOPs. If you do not have this authority, please consult with your I.T. support department before proceeding.

It is assumed that you have Administrator rights for the computer. This is required by the installation process. For ZS XPLOERER software, Windows 10 and later will not allow an installation if the user does not have administrator access. This is in line with Microsoft's Logo policy and is standard practice.



IMPORTANT:

Before installation of the software, the instrument should be switched off and disconnected.

Recommended System Requirements

The recommended computer system requirements for running this software are highlighted in table 1 below.

Table 1: Recommended system requirements for the Zetasizer XPLOERER software.

Feature	Specification
Processor Type	4th Gen+ Intel Core i7 Processor (or equivalent)
Memory	16 GB RAM
Hard Disk Storage	1 TB free hard disk space,
Display Resolution	1920 x 1080 full HD screen resolution
Connectivity	2 free USB2.0 or higher ports
Operating System *	Windows 10 64 bit. * The ZS XPLOERER software is not compatible with 32-bit Operating Systems

Supported Languages

- English

Installation Instructions

Installation process

The software suite is available both as a web download and on an auto-loading CD-ROM. Inserting the CD into a system configured to auto-run a CD will run the installation program automatically. If your system does not support this feature run the setup program from the root directory of your CD drive.

During the installation process, you will be prompted with the following message (*Figure 1*) if the Zetasizer is still connected to the PC.

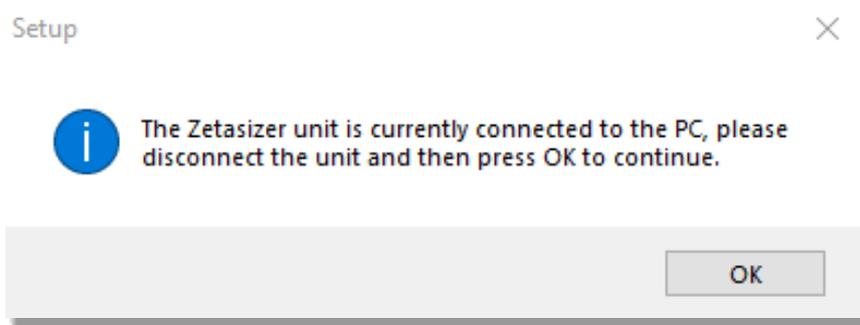


Figure 1: "Disconnect Zetasizer Unit" message



Note:

You must unplug the USB cable from the computer or Zetasizer and then press OK. If you press the OK button without performing these previous steps, then the installation will not continue.

Microsoft .Net Framework and Microsoft C++ Redistributable

The Microsoft .Net Framework 4 (version 4.6.2 or greater) and the Microsoft Visual C++ Redistributable must be installed for the ZS XPLOER software to run. This is installed during the ZS XPLOER software installation progress and under certain circumstances can involve the computer needing to restart. Completion of this stage of the installation can take a few minutes and can take over 10 minutes. Whilst these components are being installed a window such as below will be displayed, figure 2.

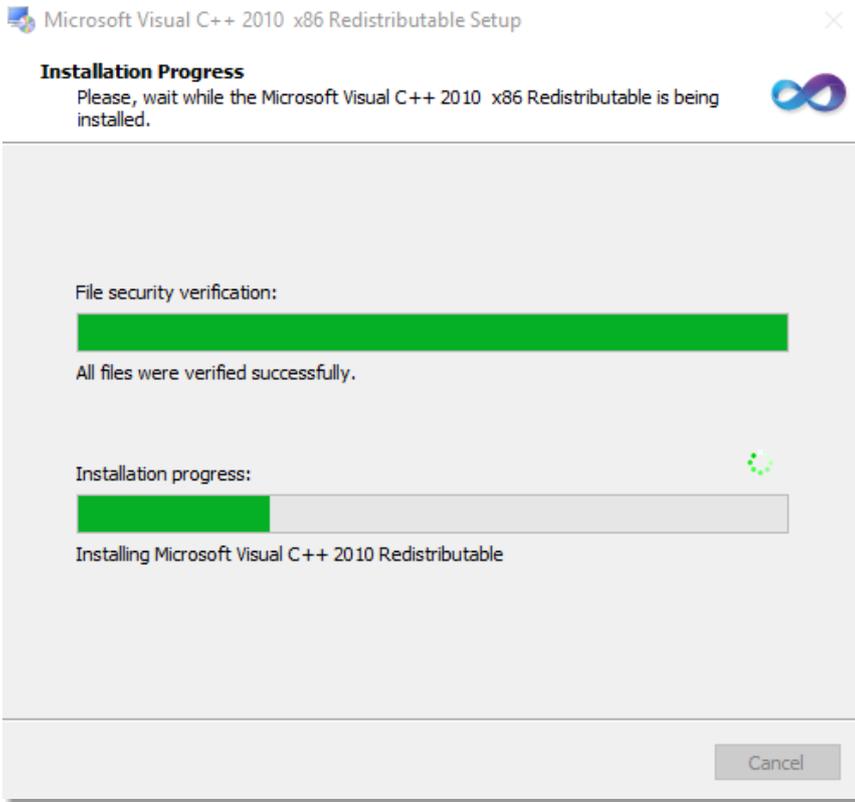


Figure 2: Microsoft Visual C++ Redistributable Installation Window

USB Driver Installation

During the installation of the USB drivers you may be prompted several times with a message as shown in Figure 3.

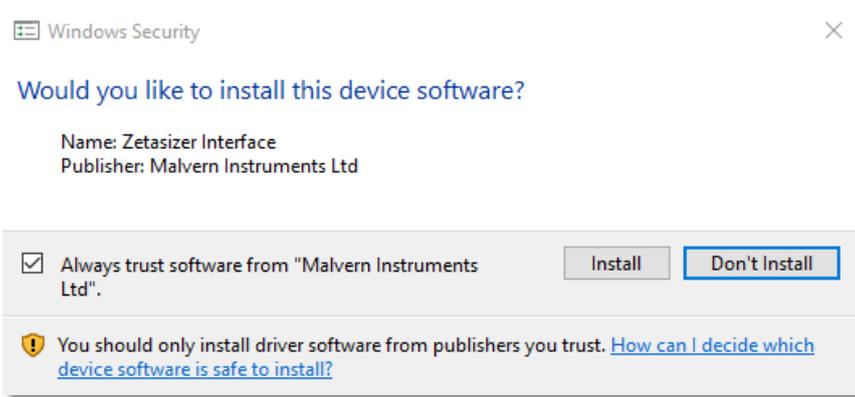


Figure 3: Install USB window

This warning can safely be ignored as the software installation has been fully tested on Windows 10. Press **Install** to continue installation of the USB drivers.

Connecting the Zetasizer Ultra/Pro to the computer

When the software has been installed and the instrument has been connected via the USB port, and switched on, the ZS XPLOER software may need to upgrade the firmware on the Zetasizer, in which case the status icon on the lower right of the software screen will indicate such (see *Figure 4*).



Figure 4 instrument firmware updating status icon

Users should not disconnect or power off their PC or instrument during normal firmware updating. In some rare occasions the firmware may fail to update correctly, in such circumstances a notification will be displayed indicating the issue – please restart the instrument and software to reset and repeat the firmware upgrade process.

With the correct firmware version installed the Zetasizer should connect to the instrument. A successful connection is indicated with an icon in the corner of the software (see *Figure 5*) showing green and with a tick.



Figure 5: Instrument connected icon

Uninstall Procedure

The software can be uninstalled using the standard Apps & Features panel in Windows Settings..

Running the installer with the ZS XPLOER software running

If the installer is run whilst the software is running, the window in *Figure 6* will display.

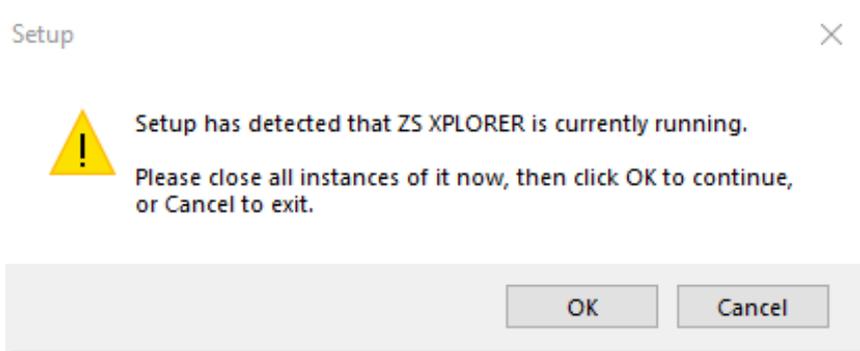


Figure 6: Running installer with software open

Connecting the MPT-3 Titrator to the PC

Ensure the computer is turned on and connected to a Zetasizer Ultra or Pro.

Connect the MPT-3 Multi-purpose Titrator to the computer using the USB cable provided, ensuring that it is turned on. Click on the settings button in the top left corner of the ZS XPLOER software. See *Figure 7*.

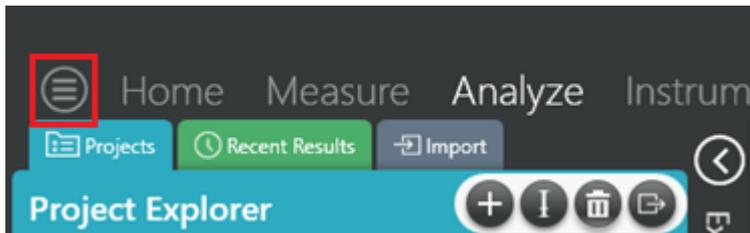


Figure 7: Software options

Click Options and navigate to the Titrator tab as seen in *Figure 8*.



Options

Folders **Titrator**

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.

Figure 8: Titrator options page

On the COM Port drop down menu, select USB Serial Port (COMXX) as shown in figure 8. (Note that the COM port number and description may vary). If the titrator has been detected on this port, then a green tick will be visible. See *Figure 9*.

Folders **Titrator***

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.

COM Port: ▼ **✔ Titrator detected.**

Figure 9: Titrator successfully detected

If the titrator is not detected on the selected COM port, then a red exclamation icon will be displayed with a message. See *Figure 10*.

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.

COM Port: 

Figure 10: Unable to detect titrator

Once the titrator has been detected, click to save the settings.

Once the settings are saved an icon and a saved message will appear next to the saved COM port as shown in Figure 11.

Folders Titrator

Connection settings

The titrator connection settings allow configuration of how the titrator connection is detected by the software.

COM Port: 

Figure 11: COM port saved

The titrator icon at the bottom right of the screen should turn green indicating that the titrator is successfully connected as shown in Figure 12.



Figure 12: Titrator successfully connected

New Features

Impose pause between zeta potential measurements if current gain becomes too high

In certain edge cases users could encounter an issue where zeta potential measurements could generate poor data due to the current drive gain being unsuitable, this would occasionally occur when a samples conductivity was near the high gain boundary, the threshold has been adjusted to make this less likely to occur and Zeta potential measurements will now add a pause between repeat measurements if the current gain is detected as being too high. This is to protect the sample and to give the sample time to cool down in order to give improved data. If the sample still reads to high after the pause the measurement is cancelled and the user is informed why.

Measurement results are created before the measurement happens

In preparation for regulated environment use of ZS Xplorer the measurement result is now created before the measurement of the sample starts. This has been updated so that users have a record of any incomplete, failed or cancelled results. The failed and aborted measurement results contain the basic information about the measurement e.g. start time, the sample, and any run settings. Only completed measurement result can be edited.

As a result of this change it is now not possible to move or copy the active measurement nor is it possible to create projects whilst a measurement is in progress.

Record parameter added for Result State

As a result of the change in measurement result creation. We have now added a measurement "Result State" parameter. The states are:

"Incomplete" which indicates the measurement is still running or that the software crashed/ was forcibly closed during the measurement,

"Failed" which indicates the measurement has finished but failed,

"Aborted" which indicates the measurement did not complete as the user chose to end the measurement

"Completed" which indicates the measurement finished successfully.

The result state parameter has been added to the record selector grid as default (on new installations) to help users differentiate the result types. – Users upgrading from a previous version of ZS Xplorer should edit their record grid parameters to add in "Result State", if they so wish.

	Qt	Measurement Type	Result State	Sample Name	M
1		Size	Completed	Sample 1	2

Instrument page now details the connected instruments capabilities and features

The instrument page has new panels detailing what a connected instrument is capable of as well as the enabled features on the instrument, figure 7, this is to support future work.

Instrument

Zetasizer

System Features

Forward Scatter	Enabled
Side Scatter	Enabled
Back Scatter	Enabled
Zeta	Enabled
MADLS	Enabled
Particle Concentration	Enabled
Titration	Titration not connected
DDLs	Enabled
Fluorescence Filter - Back Scattering	Enabled

Instrument Capabilities

13-Degree Optics	Available
90-Degree Optics	Available
NIBS Optics	Available
Zeta Optics	Available
DDLs Wheel	Available
Nominal Laser Power (mW)	10

Figure 13 example of new instrument features and capabilities panels

Change scattering standard upper limit

Some users performing MADLS particle concentration measurements were encountering an issue where their scattering standard measurements (toluene) were greater than the allowed upper limit. This upper limit has now been increased to a new limit of 1300kps. The existing lower limit is maintained at 250kps

Fixed issues

The main issues fixed in this release of the software are listed in table 2.

Reference	Issue	Description	Comment
AVN-160	Bug	Firmware upgrade is failing intermittently	Fixed
AVN-56	Story	Impose pause between zeta potential measurements if current gain becomes too high	Done
AVN-70	Bug	While running a zeta measurement, an error saying 'Please contact Malvern Panalytical support Team' was displayed	Fixed
AVN-192	Story	Switch to idempotent instrument command for starting zeta measurements	Done
AVN-191	Story	Switch to idempotent, indexed instrument command for retrieving zeta measurement data	Done
AVN-161	Story	ZS Firmware - updates to Modulator Health Check	Done
AVN-193	Story	Impose pause between zeta potential measurements if current gain becomes too high	Done
BLE-1377	Story	Populate incomplete records with basic parameters	Done
BLE-1379	Story	Imported legacy records are treated as completed measurements	Done
BLE-1376	Story	Running records cannot be moved between projects	Done
BLE-1378	Story	Only completed measurements can be edited	Done
BLE-1373	Story	Record Parameter for Measurement State	Done
BLE-1371	Bug	Recent results 'Copy' button fails to copy and disables self	Fixed
BLE-1364	Bug	Update record stage of measurement process locks up the UI	Fixed
BLE-1307	Bug	Crash - Moving/resizing application window	Fixed
BLE-1303	Bug	Compound measurement fails when repeats are required	Fixed
HEN-200	Bug	MADLS distribution plotting – diffusion and Relaxation time not plotting correctly	Fixed
HEN-205	Story	Adjust LED Brightness in Firmware	Done
HEN-270	Story	Given an Instrument is connected Then the Instrument Page shows that Instrument's Features	Done
HEN-131	Story	Add "Features / Capabilities" for existing Pro & Ultra Instruments	Done

HEN-274	Bug	Editing a result with a parameter table in the 'Summary' tab crashes the software	Fixed
HEN-225	Bug	Analyze - Edit Result - Unable to press cancel while editing a result	Fixed
HEN-294	Story	Change default record grid parameters to show result status	Done
HEN-331	Story	Prevent project modification actions to destination project of running measurement	Fixed
HEN-373	Bug	Crash when aborting measurement during result creation phase	Fixed
HEN-182	Bug	Analyze - Advice (Data Quality Guidance) isn't being displayed for the constituent Size records	Fixed
HEN-194	Story	Change scattering standard upper limit	Done

Table 2 Summary table of fixed issues in release 1.4.0

Known Issues

The following software bugs have been discovered within the software and will be investigated as part of a future release. Please follow the suggested work-around, table 3 below.

Reference	Issue	Workaround
HEN-411	If a fresh install of ZS Xplorer is ran under administrator rights certain repositories, that are created on first run, may be created with Admin only access rights. Users running the application without Admin rights will result in a crash as the application does not have permission to access its repositories.	Run first time fresh installs as non-admin user for the first time. If users are experiencing a crash, then delete Cells and Materials folders from... C:\ProgramData\Malvern Instruments\ZS XPLORER location and re-run the application as a user without Admin rights
HEN-380	Editing a size record which uses a non-zeta capable dispersant crashes the software as the dielectric constant tries to be calculated	Add an appropriate di-electric constant to user created dispersants
HEN-310 & 311	Corrupted stored view file can result in blank Custom View Workspace or crash on start-up	Ensure application is closed correctly and not terminated whilst active. If the stored views file becomes corrupted, then delete the StoredViews folder from C:\Users\UserName\Documents\Malvern Instruments\ZS XPLORER\
HEN-339	Analyze - Record selector - Changing projects shows Peak Two data as 0	It has been observed that peak 2 size data can appear to be empty or report "0" as a value. This is a display issue and refreshing the project by changing project or re-starting should refresh the display

HEN-338	Analyze - Missing widgets (grey screen) in Result Editor	Graph widgets are not displayed in Edit Result Screen when in full screen view – do not use full screen view when editing results

Table 3 significant known issues and workarounds for version 1.4.0.

Error Reporting

Should persistent problems occur contact the local Malvern Panalytical Helpdesk. To speed up response time include all the following.

A **full-screen** screen shot of any error message and everything behind it.

Full description of what was happening at time of issue and ideally leading up to it.

Instrument serial number (*e.g. MAL1060289*), instrument serial number can be found inside the sample cell basin and on the instrument back panel.

The software version, which can be found as described in a section below.

The log information described below.

And, if relevant and possible, export the relevant measurement data as described in the last section below.

Extracting log information

If an error occurs, further information about the error can be found from the Windows Event Viewer.

Click the Windows **Start** Button.

Type **Event Viewer** and press enter.

Navigate to **Applications** and **Service Logs/Zetasizer All Events**.

The window will display the most recent errors that have occurred with the ZS XPLOER software.

Error information can be selected and then exported with the **Save selected Events** button allowing this information to be passed to the Malvern Panalytical team for troubleshooting.

The contents of the measurement log window are logged to file at *Documents\Malvern Instruments\ZS XPLOER\logs*

Software version

The Software Version is vital to determining the cause of problems. To retrieve the version number:

Click on **Application Menu** button (*Figure 13*)

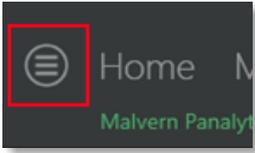


Figure 13: Application Menu button

- Click on the About button (Figure 14)
- Read version number (Figure 15)

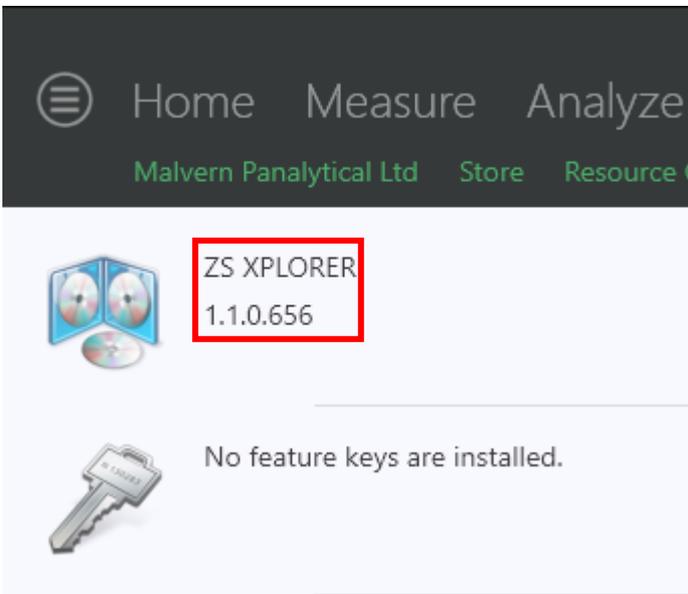


Figure 14: Software Version Number

Extracting measurement data to send

In situations where the errors appear to be related to a specific record or records, the affected records can be exported from the software by selecting them and pressing the export icon, see Figure 15, and send the *.zmes file to the Malvern Panalytical team for investigation.

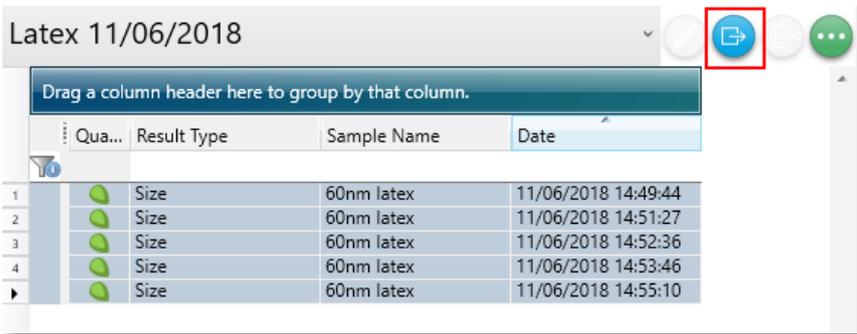


Figure 15: Exporting selected record

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